IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	10/810,144	Confirmation No. 8858
Applicant	:	Charles E. Baldwin et al.	
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DECLARATION OF CHARLES E. BALDWIN

1. I, Charles E. Baldwin, am one of the inventors in the above-identified pending patent application and have first-hand knowledge of the statements made herein.

2. As set forth in the application at paragraphs 0003-0006, the present invention is used with a source of gamma or ionizing radiation, such as Cesium^{137}. The present invention is not useful as a level sensing gauge with a neutron emitter source.

3. Ordinary TEFLON® or its derivatives are not useful for the flexible tubing of the present invention. The flexible tube must be made of either TYGON®, CHEMFLUOR®, or an equivalent material. The preferred material is CHEMFLUOR® 367. See paragraph 0020 of the application. I am not aware of any other equivalent materials available on the market today, though it may be possible that an equivalent material may be invented or become available in the future.

4. As described in paragraph 0023 of the application, the flexible tube may be enclosed in an armored, but linearly flexible, sheath. The disclosed spiral-wound, metallic conduit is crush resistant, which gives it circumferential rigidity. The inside diameter of the sheath is relatively close to the outside diameter of the flexible tube. This is also shown in the

drawings (see Fig. 4, for example). This is critically important because kinking of the flexible tube will severely degrade the detector's performance. Without the armored sheathing, bends of the scintillator tube are limited to a radius of about 30 inches (for 1 inch I.D. tubing)without kinking. Using an armored sheath that is sized relatively closely to that of the scintillator tube (2 inch I.D. armored sheath for a 1 inch I.D. tubing), as disclosed in the application, will allow a bending radius of as little as 12 inches without kinking or performance loss.

5. As disclosed at paragraph 0024 of the application and shown in various figures of the drawing at 30, the use of TYVEK® spunbonded olefin sheet material wrapped around the flexible tube and positioned between the flexible tube and the outer sheath provides both abrasion resistance and light-reflecting properties. This material is known to be tough (resistant to tearing) and slick (low friction). The abrasion resistance is important both during assembly of the device and, to an even greater extent, during flexing of the assembled detector during shipping, installation, and relative movement due to thermal expansion and contraction in the field. Additionally, this material helps to fill the space between the tube, which enhances the ability of the detector to be bent without kinking the inner tube.

6. The present invention does not use scintillating optical fibers. The use of such optical fibers, which are expensive and intended to be replaced by the present invention, are mutually exclusive of the liquid-filled scintillator described and claimed herein. See paragraph 0007 in the background section of the present application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are

punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Charles E. Baldwin